

REMARKS/ARGUMENTS

Reconsideration of this application is respectfully requested in view of the foregoing amendments and discussion presented herein.

1. Rejection of Claims 1-5, 7, 9-20, 23-33, 35, 37-38 and 40-44 under 35 U.S.C. § 102(b).

Claims 1-5, 7, 9-20, 23-33, 35, 37-38 and 40-44 were rejected under 35 U.S.C. § 102(b) as being anticipated by Sugimoto (Appears to be U.S. Pat. No. 5,461,231).

(Note - The office action does not direct Applicant as to which Sugimoto patent reference is used for the rejection. Sugimoto has more than one related patent; for example patent number 5,461,231 and 4,849,635. It appears to the Applicant, after Examining both documents in relation to Examiner comments that patent 5,461,231 is the more fitting reference. In addition patent numbers were not provided by the Examiner for the other cited references.)

After carefully considering the grounds for rejection the Applicant responds as follows.

(a) Claim 1. Independent Claim 1 recites an apparatus for detecting intrusions. Support for the rejection of Claim 1 is directed at a generalized conception of the invention and does not address every claim element as required to provide *prima facie* support for an anticipation rejection.

In particular, Sugimoto '231 teaches triggering the alarm based on horizontal differences between sensors, not vertical. In Fig. 1 it is clearly seen and described that the first sensor pair arranged vertically detects humans while the second sensor pair is to detect animals. Referring to column 4, lines 29-33 of Sugimoto '231, "*The outputs from sensors 4a and 4b are mutually negated because of the differential electrical connection, and the resulting outputs have low peaks values a2 and b2 as shown in FIG. 3(b).*" The discussion continues through column 4, line 56 discussing how the signal from the vertical sensor is compared against the signal from the horizontal

sensor. It can be said therefore, that Sugimoto '231 teaches generating an alarm when $S_{\text{Vertical}} - S_{\text{Horizontal}} \geq \text{Thresh.}$

In the other embodiments, Sugimoto also teaches this horizontal differentiation, as can be seen in FIG. 15-30. For example, taking a closer look at FIG. 15-16 and the description in column 6, lines 14-67 within the Sugimoto reference, it is seen that the alarm is generated in response to comparing the peaks from the output signal of sensor group Ah with the peaks from the output signal of sensor group Am.

Claim 1 of the instant application contains language which differentiates from the above teachings of Sugimoto. Specifically, in the original Claim 1 it is recited that the intrusion signal is generated in response to "*the registration of sufficient infrared activity within said protected region on multiple vertically arranged said infrared sensing elements*" (emphasis added). Yet, this aspect is not taught by the Sugimoto '231 reference which relies on different operating principles.

In addition, Claim 1 has been amended to provide further distinctive clarity over the relied-upon reference. In particular the claim now describes that the infrared sensor assembly is "*configured for generating at least two electrical signals in response to activity registered by two vertically adjacent infrared sensing elements within a group of at least four infrared sensing elements*". It should be recognized that Sugimoto '231 does not teach generating at least two electrical signals which are responsive to activity of vertically adjacent sensing elements. Sugimoto teaches one signal from a vertical sensor and one from a horizontal sensor. In fact in Sugimoto the vertical signals are common-mode therein negating the output of the vertical sensor.

There are a number of problems which would arise with the Sugimoto teaching. By way of example, the assumption is made that human targets have the same thermal signature from top to bottom which will allow the vertically separated elements to common mode out. Yet, Applicant testing has shown that the temperature differential of the upper torso is typically twice that of the lower body. Also the principles of Sugimoto presume that the human will have a larger thermal signature than a dog.

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Applicant testing of over 90 dog breeds has shown that a human heat signature is often lower than that of a dog. These problems are described in the background of the invention to be overcome by the present invention. In addition, the techniques of Sugimoto pose problems with regard to the speed of the object moving through the field. One of ordinary skill in the art will appreciate that the output of pyroelectric sensors is highly frequency dependent, whereas moving through the field at one-half speed results in generating about one-half as much signal. To properly assess the threat the threshold levels would need to be adjusted in response to the rate of movement (i.e., meters/second) of the human or animal across the sense field.

The present invention overcomes these shortcomings as described in the background of the invention thus increasing sensitivity while reducing the possibility of false alarms.

Consequently, since Sumitomo '231 does not teach every aspect of Claim 1 it cannot be considered to anticipate Claim 1. To support an anticipation rejection, every claim element must be taught or inherent in a single prior art reference, Manual of Patent Examining Procedure (MPEP) §706.02a.

Therefore, Applicant respectfully asserts that the presently claimed invention is patently distinct from the cited references, and the Applicant therefore requests that the present rejection of Claim 1 and the claims which depend therefrom be withdrawn.

(b) Claim 20. Independent Claim 20 describes an apparatus for detecting intrusion and has a similar structure as recited in Claim 1, but additionally describes the inclusion of a lens assembly for focusing infrared energy from upper and lower tiers of detection zones and other aspects.

In rejecting Claim 20 it is stated that "*Sugimoto discloses an apparatus for detecting intrusion comprising an infrared sensor assembly having at least four infrared sensing elements*". However, Claim 20 describes a relationship between those sensing elements and associated circuitry which for example generates an intrusion signal "*in response to receipt of a sufficient level of simultaneous infrared activity on vertically*

separated detection zones". Sugimoto teaches away from the invention as embodied in Claim 20, as his teachings are directed at sensing differences between horizontally distributed sensors and further generates the intrusion in response to comparing signals which are not simultaneous, but temporally displaced, such as referring to the peak/hold circuits 9, 10 in the schematics of FIG. 2 and 21.

Accordingly, Claim 20 describes aspects which are not taught by the Sugimoto reference, wherein the rejection of Claim 20 and the claims which depend therefrom should be withdrawn.

(c) Claim 38. Independent Claim 38 is drawn to an apparatus for detecting intrusions. In support of the rejection it is stated that "*Sugimoto discloses an apparatus for detecting intrusions within a protected region comprising an infrared sensor assembly 3, 4, having at least four infrared sensing elements 15a-d, 12, 11, lens assembly 2, 21, 22, 23 a threshold circuit, and a mode selector input*".

However, the recited teachings do not comport with the teachings of the Sugimoto references and further do not teach all claimed elements.

Specifically, the pet immune mode operates by "*generating intrusion signals in response to a sufficient level of infrared activity registered on at least two tiers of detection zones which are vertically adjacent to one another*". As described, Sugimoto operates on the principle of detecting temporally displaced horizontal movement.

Sugimoto also does not describe having multiple modes of sensing, as taught by the instant application and recited in Claim 38. The claim describes how both a pet-immune and non-pet-immune mode are to process the signals. In support of the mode selector input the rejection makes a reference to column 7, lines 50-65, however, this section of the Sugimoto reference does not describe a mode selector at all and only provides information about adding additional detection regions. Sugimoto does not teach how one would reconfigure the horizontal temporally displaced sensing scheme to provide for selective pet-immune sensing, not does it teach any other such mode selection mechanisms.

Therefore, Claim 38 recites aspects which are not taught by the Sugimoto reference and is not anticipated by that reference, and the rejection of Claim 38 and the claims which depend therefrom should be withdrawn.

(d) Claim 40. Independent Claim 40 is drawn to a method of discriminating human intrusion from animal intrusion. In support of the rejection it is stated that Sumitomo provides "*rejecting common infrared signals simultaneously occurring on horizontally adjacent detection zones within a given tier, and of rejecting common infrared signals simultaneously occurring on horizontally adjacent detection zones within a given said detection tier*". To support that contention a reference to Fig. 11 and 27 is made, however, these figures only illustrate zones created using one or two optical systems. There is no support provided and none found by the Applicant in the reference which supports the above aspects recited in Claim 40.

Accordingly, the teachings of Sugimoto '231 does not comport to these aspects of the invention, wherein it can not be said to anticipate this claim.

Therefore, independent Claim 40 is not anticipated by the relied-upon reference, and the rejection of Claim 40 and the claims which depend therefrom should be withdrawn.

(e) Claims 2-5, 7, 9-19, 23-33, 35, 37 and 41-44. Dependent Claims 2-5, 7, 9-19, 23-33, 35, 37 and 41-44 within the rejected group of claims are based on independent claims whose patentability over the cited reference has been discussed, wherein these claims should be considered *a fortiori* allowable. However, a number of these claims provide additional patentable distinctions, and have been improperly equated to the teachings of the Sugimoto '231 reference. The following discusses by way of example a few such shortcomings.

Claim 9. The rejection of claim 9 asserts only that Sugimoto "*discloses a vertically-oriented pair of sensing elements*", which represents an over-generalization of what is recited in Claim 9. Dependent Claim 9 recites "*wherein said means for generating an intrusion signal is configured to detect levels of infrared energy on a*

vertically-oriented pair of sensing elements to discern animal intrusions registered upon any single sensing elements, from human intrusions which are registered as sufficient simultaneous activity on two vertically separated sensing elements".

As can be seen, numerous aspects of the recited claim are not met by the Sumitomo reference. Specifically, there is nothing mentioned about detecting levels of energy on vertically-oriented pair of sensing elements ...as sufficient simultaneous activity on two vertically-separated sensing elements. Sumitomo as described previously does not operate in that manner.

Therefore, support is lacking for the rejection of Claim 9, wherein the rejection of Claim 9 and the claims which depend therefrom should be withdrawn.

Claim 11. Dependent Claim 11 recites a "*mode selection device*" for selecting either a pet-immune mode or a non-pet-immune mode. In support of the rejection column 7, lines 50-67 of Sugimoto are offered, however, there is nothing in this section, nor anything that the Applicant has found in the Sugimoto reference, which comports to a pet-immune mode selection device.

Claim 12. Dependent Claim 12 expands on the pet-immune and non-pet-immune modes recited in Claim 11. It describes in detail how each of these modes are sensed. No support is provided other than that of column 7, lines 50-67 as previously described.

Claim 13. Dependent Claim 13 describes the use of horizontal channels, vertical pairs within which have already been described in the base claim. Fig. 27 of Sugimoto is put forth in support of the rejection, but these figures only show zones for a sensor and do not address the use of horizontal channels of vertical pairs. Sensing within Sugimoto is handled with one signal per dual or quad sensor. No support for the rejection is thus found in the Sugimoto reference.

It can be seen from the above discussion that aspects of a number of the dependent claims provide additional patentable aspects.

Accordingly, the rejection of the dependent claims should be withdrawn as they

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should be considered a *fortiori* allowable in view of the independent claim, while many of the dependent claims provide further patentable aspects which were not properly considered in the rejection.

2. Traversal of Rejection of Claim 1, In re Donaldson.

The Applicant respectfully traverses the grounds for rejection, and cites *In re Donaldson*, 16 F.3d 1189, 1193 (Fed. Cir. 1994)(en banc) as the basis for the traversal. Claim 1 is written in means plus function form pursuant to 35 U.S.C. §112, sixth paragraph, and therefore, must be interpreted during examination under *In re Donaldson*.

In rejecting Claim 1, as well as the claims that depend therefrom, the Examiner made no specific fact findings as to the scope of equivalents for the means plus function elements in the claims. Instead, the Examiner appears to have followed the provisions of MPEP § 2183 ("Making a Prima Facie Case of Equivalence"), which states:

If the examiner finds that a prior art element performs the function specified in the claim, and is not excluded by any explicit definition provided in the specification for an equivalent, the examiner should infer from that finding that the prior art element is an equivalent, and should then conclude that the claimed limitation is anticipated by the prior art element. The burden then shifts to applicant to show that the element shown in the prior art is not an equivalent of the structure ... disclosed in the application. *In re Mulder*, 716 F.2d 1542, 219 U.S.P.Q. 189 (Fed. Cir. 1983). No further analysis of equivalents is required of the examiner until applicant disagrees with the examiner's conclusion, and provides reasons why the prior art element should not be considered an equivalent.

While the Examiner appears to have followed the provisions of MPEP §2183, such provisions are contrary to Federal Circuit law. The Federal Circuit has held that an examiner "construing means-plus-function language in a claim must look to the

specification and interpret that language in light of the corresponding structure ... described therein, and equivalents thereof," *In re Donaldson*, 16 F.3d 1189, 1193 (Fed. Cir. 1994)(en banc), and in so ruling expressly denied that "the PTO is exempt from this mandate." *Id.* The Federal Circuit added that it was specifically overruling any precedent that suggested or held to the contrary. *Id.* at 1193-94. In response to the PTO's argument that the court's ruling conflicted with the principle that a claim should be given its broadest reasonable interpretation during prosecution, the Federal Circuit held that the *Donaldson* decision was setting "a limit on how broadly the PTO may construe means-plus-function language under the rubric of 'reasonable interpretation.'" *Id.* at 1194. In other words, an examiner's claim interpretation is not "reasonable" if it is not based on the specification's description of the implementation of the means element of the claim. The court then said, "Accordingly, the PTO may not disregard the structure disclosed in the specification corresponding to such [means-plus-function] language when rendering a patentability determination." *Id.* at 1195.

Here, as in *Donaldson*, the Examiner is required by statute to look to the Applicant's specification and construe the "means" language as referring to corresponding means disclosed in the specification and equivalents thereof." See *id.* at 1195. However, the Examiner did not construe the means language of these claims, however. Nor did the Examiner find, on the basis of specific facts of record here, that the means disclosed in the Applicant's specification were equivalent to that of the cited references. Instead, as prescribed by MPEP §§ 2183-84, the Examiner simply presumed equivalence. The presumption methodology used here, which the MPEP prescribes, clearly conflicts with the requirements of the Federal Circuit's *Donaldson* decision. The approach taken by the Examiner in this case also conflicts with *In re Bond*, 931 F.2d 831 (Fed. Cir. 1990).

The very point of these cases is that, in this context, limitations from the specification control the interpretation of the claim. Under §112, paragraph 6, a means-plus-function element of a claim must be construed to mean that which is

disclosed in the specification and its equivalents. In *Donaldson*, the Federal Circuit said that "our holding does not conflict with the general claim construction principle that limitations found only in the specification of a patent or patent application should not be imported or read into a claim." In other words, the court was saying that a §112, paragraph 6 "means" element does not need to be "imported or read into" a means-plus-function claim because the specification's limitations and their equivalents are already in the claim by virtue of §112, paragraph 6's command. Thus, the Federal Circuit said (16 F.3d at 1195): "What we are dealing with in this case is the construction of a limitation already in the claim in the form of a means-plus-function clause and a statutory mandate on how that clause must be construed."

Based on the foregoing, the Applicant respectfully submits that the rejection of Claim 1, as well as the claims that depend therefrom lacks proper foundation and that the rejection should be withdrawn. This claim which includes means plus function limitations, should have been interpreted in view of the specification as required by *In re Donaldson*. If those claims had been so interpreted, they would have been allowable since the cited references do not, singly or in combination, teach, suggest or provide motivation or incentive for the subject matter recited in those claims.

3. Obviousness Considerations of Claims 1-45.

Nor would the subject matter of Claims 1-45 be obvious to a person having ordinary skill in the art in view of Sugimoto, Miyake, Reiss, Sheffer, and Katz singly or in combination. Neither the references cited by the Examiner, nor the combination thereof, suggests, teaches or provides motivation for a means of generating an intrusion alarm in response to registering sufficient simultaneous activity on at least two vertically adjacent infrared sensing elements within an infrared sensor having at least four infrared sensing elements. These references also do not disclose the common-modulating on horizontally adjacent elements within the at least four infrared sensor elements. These references also do not disclose the selection of pet-immune and non-pet-immune modes, and in particular do not disclose this aspect in combination with the

unique sensing structure and methodology described in the claims. Nor is there any suggestion, teaching or motivation which could be derived from these references which would cause a person having ordinary skill in the art to so modify Sugimoto's intrusion detector, which operates according to different principles of operation.

Therefore, since there is no need, or motivation, for creating an intrusion detector with the claimed configuration and, further, since there is no suggestion, teaching or motivation which can be found in any of these references from which a person having ordinary skill in the art would find it obvious to modify the intrusion detectors therein to correspond to that described in the Applicant's claims, Claims 1-45 recite structures which are patentable over the cited references for purposes of 35 U.S.C. § 103.

4. Amendment of Claim 1.

Claim 1. Independent Claim 1 has been amended to recite with greater particularity the configuration of the intrusion sensor. Specifically, the infrared sensor assembly is now said to be "configured for generating at least two electrical signals in response to activity registered by two vertically adjacent infrared sensing elements within a group of at least four infrared sensing elements". The last elements of the claim are also amended to provide proper antecedent with the above inclusion. Support for the amendment is found in original Claims 9, 10, 12, 13, 19, 20, 23, 26, 38 and so forth.

5. Amendments Made Without Prejudice or Estoppel.

Notwithstanding the amendment made and accompanying traversing remarks provided above, Applicants have made these amendments in order expedite allowance of the currently pending subject matter. However, Applicants do not acquiesce in the original ground for rejection with respect to the original form of these claims. These amendments have been made without any prejudice, waiver, or estoppel, and without forfeiture or dedication to the public, with respect to the original subject matter of the claims as originally filed or in their form immediately preceding these amendments.

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Applicants reserve the right to pursue the original scope of these claims in the future, such as through continuation practice, for example.

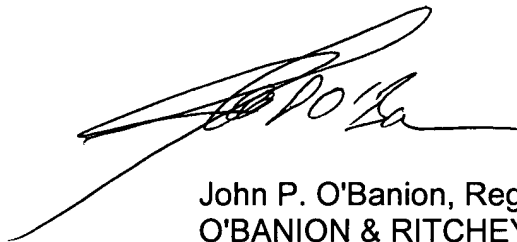
6. Conclusion.

Based on the foregoing, Applicant respectfully requests that the various grounds for rejection in the Office Action be reconsidered and withdrawn with respect to the presently amended form of the claims, and that a Notice of Allowance be issued for the present application to pass to issuance.

In the event any further matters remain at issue with respect to the present application, Applicant respectfully requests that the Examiner please contact the undersigned below at the telephone number indicated in order to discuss such matter prior to the next action on the merits of this application.

Date: 11/30/05

Respectfully submitted,

A handwritten signature in black ink, appearing to read "J. P. O'Banion", written over a horizontal line.

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